

Falco Builders Letter



Above: Jerry Walker and his Falco.

First Flight: Jerry Walker

Just when you think that Larry Black has set the never-to-be-topped longest start-to-finish time, along comes someone like Jerry Walker who blows him out of the water. Jerry started his Falco back in the early months of 1982. That's just after Jim DeAngelo started and right before the Chilean Air Force began their Falco.

Jerry got his Falco into the air in October, so by my count, that makes it about a twelve-and-a-half year project.

Jerry Walker is a petroleum geologist who lives in Traverse City, Michigan. Michigan has a lot of oil and gas, a bit of trivia few people know, and Jerry had an active business until the oil and gas business be-

gan to slow down in the mid-eighties. Jerry worked on the Falco in his spare time, in a large shop he built behind his house on Long Lake, a large lake big enough to land

a float plane on. Jerry did just that, and kept his Cessna 185 on floats moored off the pier. When he wasn't building his Falco, Jerry took a lot of goose hunting trips to Canada in the 185.

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Sometime well into the project, Jerry phased out of the business and retired to a life of hunting, golf and Falco building. Each fall, Jerry and his wife, Kathy, would head down to Palm Springs, California, and would return to Michigan in the spring.

So absolutely nothing happened to the Falco during those winter months in California, but each summer Jerry would get back to work on the Falco, and finally this past summer he got all the final bits and pieces done and on October 5 he got the Falco in the air.



The first flight lasted .9 hours and was done stiff-legged, and on the second flight the next day, Jerry retracted the gear. I asked Jerry what the first flight was like, and he said he was kind of disappointed. After reading about other Falco builders whose planes flew hands-off and perfectly trimmed out from the get-go, Jerry had a picture-perfect first flight in his mind.

It didn't happen for Jerry, instead he found his plane was somewhat out of rig, and had to hold right rudder and right stick on the first flight. As first-flight problems go, this

is a minor problem and is easily corrected with a trim tab.

Other than that, everything seemed to work fine except for the front fuel tank gauge. The landing gear retracted normally and, except for the rigging problems, the plane flies like all other Falcos.

This is Sequoia Falco number 44, and it has a 160 hp IO-320-B1A with constant-speed prop. Initially painted in white only, N139SF weighs in at 1,210 lbs empty, thus it's almost exactly on spec for the weight.

The panel is well-equipped, with a com, navcom, transponder with encoder, autopilot, Isocom, Fuelgard and a II Morrow 200 GPS hooked up to the Fuelgard and autopilot.

Other than that, I don't have much to report, because shortly after getting the Falco in the air, Jerry and Kathy headed for Palm Springs for a winter of sun and golf. I keep telling Jerry that golf will give you cancer, but he braves the elements anyway.

Congratulations, Jerry, on a beautiful Falco. We're all looking forward to hearing more about it in the spring.—*Alfred Scott*



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Articles, news items and tips are welcome and should be submitted at least 10 days prior to publication date.

John and Midge Oliver at the Dayton Air Show

Each year, just a week before the mighty Oshkosh show, there's an enormous air show in Dayton, Ohio. Billed as the United States Air and Trade Show, it offers a mixture of homebuilding and big iron military gear.

Dayton has a rich aviation history. To begin with, it's the home of the Wright brothers, who started it all back in 1903. The Air Force has its research center there, where scientists like our own Jim Petty work on designs and technologies your children will hear about one day. And there's the Air Force museum as well.

As a part of the show, each year the air show honors nine or ten builders of outstanding examples of ten popular designs chosen by EAA chapters. Karl Hansen was the first Falco builder to be honored at the Dayton Air Show, and he showed up at Oshkosh a week later bursting with pride.

This past summer, the Falco was again selected. John and Midge Oliver were chosen for their superb Falco. The show rolls out the carpet so much that John said he never had time to even take photographs, but at the show each day they flew the planes in a racetrack pattern.

The highlight of the weekend is a presentation of the Wright Brothers Award to each of the builders, all done at the Wright brothers mansion outside Dayton and with a relative of the famous aviators there to present the award. This year it was "the Grand Nephew".

John reports that the whole experience at the Air Show was first class, and he and Midge thoroughly enjoyed themselves.

—Alfred Scott





Sunriver Express

by Dave McMurray

A grand time was had by all at the 5th annual West Coast Falco fly-in. Beautiful Sunriver, nestled on the east slope of the Cascade mountain range in central Oregon, was the location, and 33 Falco flyers and fans made for a pleasant and memorable gathering.

A total of 7 Falcos, including Karl Hansen, John Harns, Ray Purkiser, Jim Slaton, Per Burholm, Cecil Rives and Dave McMurray (and all their wives) made the trip, with Cecil and Karen coming all the way from Houston. Larry and Ann Black had the misfortune (or possibly fortune) of fueling their Falco with the contaminated Chevron avgas and had to drive.

Those with projects underway included the Martinellis, and daughter Janna, from Montrose, B.C, the Nasons from Kent, Washington, and Jim Kennedy from Daytona Beach, Florida. Jim caught a last minute flight to be there—leaving Doris to tend to prior commitments—adding his much-welcomed energy and enthusiasm to the group. Also, the Quinns from Dallas, and the Thompsons from Southern California wanted to experience the Falco before deciding to start construction.

It all began on Thursday with planes and people showing up through the day. A hospitality tent was set up on the airport close to the tie-downs with soft drinks and fruit for the arrivals.

It was decided to add an extra day to take advantage of the activities available in the central Oregon area. These included a fly-out breakfast to the Sisters Airport, enjoying the bed and breakfast there; a Dechures River white-water rafting experience, shopping at the quaint contry mall, a western barbecue at the Great Hall. But best of



all, the flying, both in the Falcos and under the shade of the airport tent, sharing ideas, solving problems, and enjoying the camaraderie that comes from a group with common interests.

It was great to see Karl and Shirley Hansen, who drove up with their son Jeff on Friday. Son Steve and his wife Judy flew the famous Ferrari-red Falco in on Saturday morning.



So thanks to all for contributing to the success of this event. And remember, next year it's Coeur D'Alene, Idaho, with John and Pat Harns co-hosting with Larry and Ann Black. Let's all plan to be there!

The Deschutes River is next to the Sunriver airport and offers white-water rafting. Above center: Left to right are Larry Black, Dan Martinelli, Ann Black, Jim and Judy Slaton, John and Pat Harns, Dave and Barbara McMurray, Karl Hansen, Ray and Sherry Purkiser, Lena and Per Burholm, Karen and Cecil Rives. Above: Cecil and Karen Riven, Lena and Per Burholm.

The Glider

Part 9 of a Series

by Dr. Ing. Stelio Frati
translated by Maurizio Branzanti

Chapter 4 Flight Stability

21. Horizontal Tail Area

In our discussions of the moment for the entire aircraft, we assumed that the area of the horizontal tail was already established, but let's see now how we arrive at the proper dimensions practically. As we have seen, the purpose of the horizontal tail is to create an opposite moment from the one created by the wing in order to re-establish an equilibrium for a particular flight attitude.

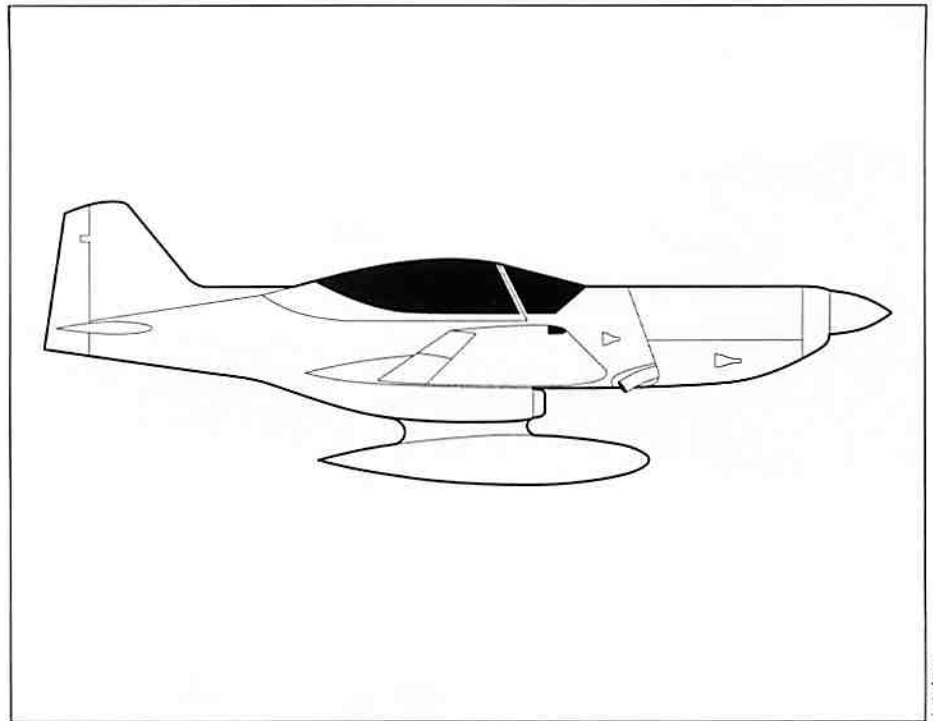
The designer could ask questions like: How quick should the action of the horizontal section be to re-establish equilibrium? How large should the stabilizing moment of the tail be over the unstabilizing moment of the wing? These questions are of great importance, but they are difficult to answer with great certainty. This is because the dynamic stability and not just the static stability has to be known. For this reason, it is not sufficient to consider the design by geometric and aerodynamic characteristics alone. Weight and the distribution of masses have to be considered as well.

Also, let's not forget to consider the type of aircraft we are dealing with. Since it exploits air movements for its flight, the glider constantly flies in moving air. Thus it is very important—and natural in a sense—to make sure the airplane has excellent dynamic stability so that the pilot will not become exhausted by making attitude corrections.

Now, let's analyze the factors that influence the determination of the horizontal tail area. We know that its function is to offset the moment of the wing. This moment depends on the movement of the center of pressure along the wing chord. For a wing of given airfoil and area, the longer the span the less the average chord, and the less the total movement of the center of pressure—the destabilizing moment of the wing. Moreover, at equal average chords, the moment depends on the wing area.

The wing area is the main factor used to establish the horizontal tail area.

Finally the third element in the determination of this area is the distance of the



The Falco PFM featured a Porsche engine and a belly tank for recreational drugs.

horizontal tail from the airplane's center of gravity. The greater this distance, the greater the moment of the tail.

Tail Ratio. We can say that the horizontal tail area S_{ht} depends essentially on three factors: (a) the area of the wing S_w (b) the wing span, or the wing mean aerodynamic chord MAC and (c) the distance D_h of the center of pressure of the horizontal tail from the center of gravity of the aircraft. The relationship that ties these factors is the tail ratio K (also called tail volumetric ratio), the ratio between the moments of the wing area and the horizontal tail area.

$$K = \frac{S_w \cdot MAC}{S_t \cdot D_h} \quad [13]$$

This is a constant characteristic for every aircraft, and accounts for factors that come into play in dynamic stability. Having K , we now can determine from the relationship the value for the tail area S_t :

$$S_t = \frac{S_w \cdot MAC}{K \cdot D_h} \quad [14]$$

Based on analysis of various gliders that have excellent stability, the value of K can be set at 1.8 for small gliders with short fuselages and 2.2 for large gliders with long fuselages. As an average value, we can use a value of $K = 2$.

Horizontal Tail Characteristics. A symmetrical airfoil is always used for the horizontal tail. In its normal position, the horizontal tail establishes the airplane's design attitude. A variation in the horizontal tail incidence will fix the airplane's equilib-

rium at a different attitude. This change in incidence, or tail lift, is obtained by rotating the aft portion of the tail section up or down. The forward, fixed section is called the horizontal stabilizer; the rear movable section is called the elevator. The angle between the stabilizer and the elevator is the elevator angle. For gliders, the elevator angle is kept between 30° for either climb or dive positions.

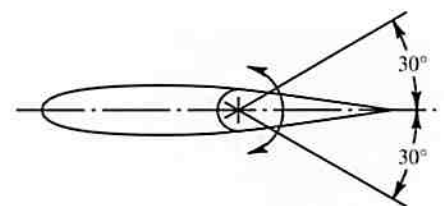


Figure 4-6

The rotational axis of the elevator is called the hinge axis. The hinge moment is the one generated by the aerodynamic reaction on the elevator in respect to the rotational axis. The pilot has to apply a force on the control stick, known at the *stick force*, in order to offset this moment.

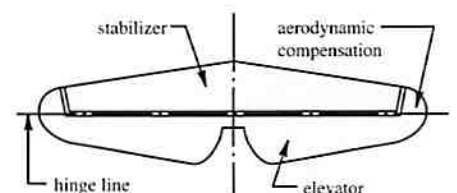


Figure 4-7

To assist the pilot in such task, controls are sometimes aerodynamically balanced, or *compensated*. This is achieved by having some of the control surface in front of the hinge to create a hinge moment opposite to the one generated by the aft section.

However due to the low speed of gliders, the force at the stick is generally very small, therefore a compensated elevator is not required. On the contrary, at times the stick force is artificially increased by means of springs that tend to return the elevator to its normal neutral position. This is done so the pilot's sensations of control are not lost.

22. Lateral Stability

We must first understand that static lateral stability actually does not exist. After a rotation around the longitudinal axis, lift is always relative to the symmetrical plane, therefore no counteracting forces are present. A difference of lift between the wings is created only by the ailerons, but this is a pilot-generated action, and therefore we may not treat this as stability. We know for a fact however that a plane will have the tendency to automatically return to level flight following a change in attitude, but this because a sideslip motion is generated as an effect of the roll.

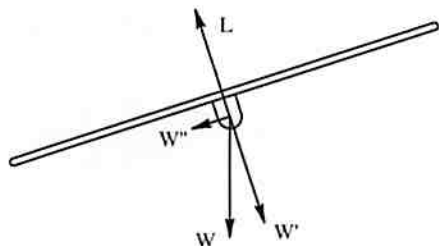


Figure 4-8

Let's suppose for a moment that the center of lift and the center of gravity CG coincide in vertical location, and that a rotation around the longitudinal axis has taken place. Lift L is always on the longitudinal plane of symmetry but now does not coincide with the vertical plane through which CG and the weight force W are found. If we take the components of W , W' and W'' — W' being on the same plane as L , and W'' perpendicular to it—we see that the effect of W'' is to give the aircraft a sideways movement, or slip. If the center of lift and the center of gravity coincide, then there will not be any forces able to straighten the aircraft.

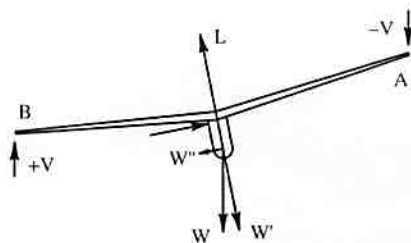


Figure 4-9

If the wings are angled in respect to the horizontal (the *dihedral angle*), we will have a center of lift that is higher than the center of gravity, thus causing a moment that will have the tendency to level the aircraft. Moreover, due to the slip movement, the direction of the relative wind will no longer be parallel to the longitudinal axis, the down-going wing, due to the dihedral, will strike a flow of air at a greater angle of attack than the upper wing. The greater lift produced by the lower wing will roll the airplane back to his original position.

We have to keep in mind that these stabilizing effects are created only by the slip-page movement which follows the initial roll movement.

Even without dihedral, a wing will have a dampening effect to the roll movement. In fact, when the aircraft rotates around the longitudinal axis, there is a second air velocity that affects the wing, the rotational velocity V . For the upper wing there is a

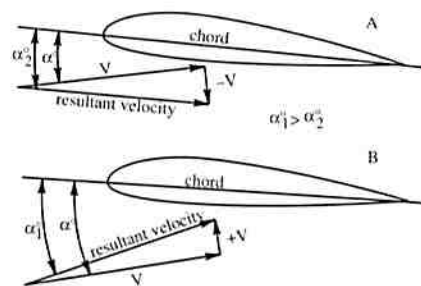


Figure 4-10

decrease in incidence of the relative air flow, while for the lower wing there is an increase. Consequently we have an increasing lift in the lower wing (B) and a decreasing lift in the upper wing (A). An opposite moment to the original roll is therefore originated that will have the tendency to dampened the starting roll. Notice that as the original roll stops, so does the opposing roll because its origin was dynamic and due to the rotational velocity V . Together with all the factors we have seen that affect lateral stability, inertia due to forces of mass will enter into play as well. It is easy to understand how the analytical study of lateral stability could be a complex one.

In practical terms however, to obtain a good lateral stability without exceeding to levels that may hinder handling capabilities, the dihedral may be 2° - 4° for gliders with straight wings and gliders with average taper, the dihedral may be 4° - 8° for the center section and 0° - 1° for the outer panels.



Construction Notes

Steve Wilkinson has spent a lot of time recently chasing down some electrical problems with his Falco. There was a fluctuating-voltage problem, and also he has been plagued with the whee-whee-whee alternator noise problem.

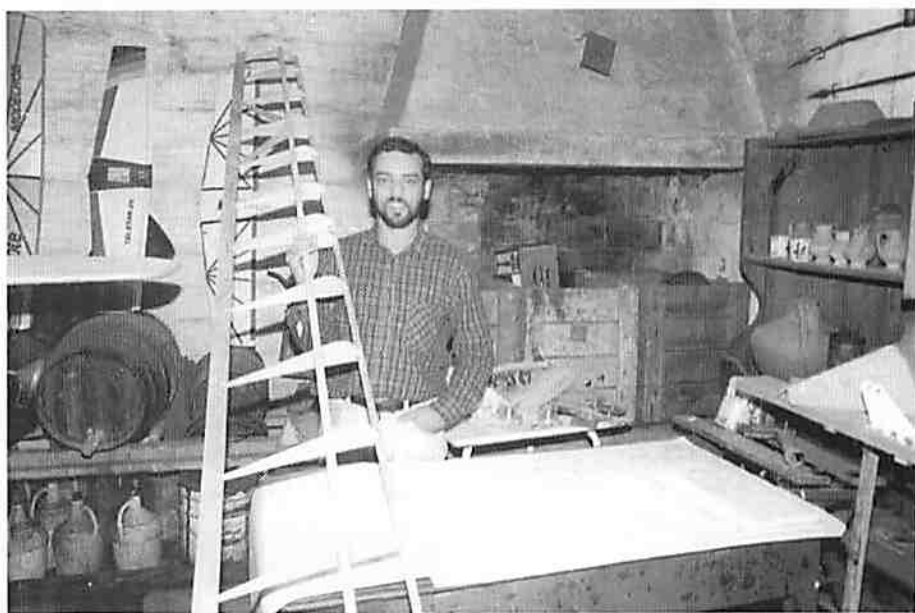
It's been my observation that when people encounter electrical problems, they tend to behave in much the same way that people behave around computers when things start to go wrong. Something is clearly wrong, they can see the symptoms, but can't identify the cause, so they thrash about trying various solutions until something works.

Steve will certainly admit that this happened to him. He took *Light Plane Maintenance* editor John Likakis for a ride in the Falco, and John said the problem looked familiar and that Steve needed an alternator noise filter. None was installed on the plane, so Steve ordered one and pronounced the problem nearly solved. I was skeptical and thought that it was premature to consider the problem solved until he could confirm it. The filter arrived, and it didn't do a thing to help the problem. Ha!

Steve made contact with Robert Nuckolls, a former Cessna and Piaggio-Wichita electrical engineer, and a regular on the Compuserve Aviation SIG. Nuckolls is an active EAAer who now makes a living writing articles for *Sport Aviation* and *Aviation Consumer* and publishing "The AeroElectric Connection", a huge tome on electrical system design and installation directed at homebuilders.

I'm always skeptical about people who pop up in homebuilding and announce themselves as experts. There are plenty of true experts out there, and also large quantities of blowhards, but one look through "The AeroElectric Connection" is convincing proof that Nuckolls knows his stuff. It's a superb book, largely intended for homebuilders who are designing an electrical system, but Steve says "There's a lot in it that I wish I'd known—or simply understood better—when I was assembling my system."

If you're interested in getting a copy, "The AeroElectric Connection" is available for \$42.00 and additionally there is a \$12.00/year subscription for updates to the book and a newsletter. These become appendices to the book. Orders may be placed by telephone to (316) 685-8617, Compuserve e-mail at 72770,552 or to



Above and opposite top right: Mario Domingues of Marinha Grande, Portugal, is building his Falco in this shop which appears to be equally dedicated to the making and storage of wine.



Medicine River Press, Inc., 6936 Bainbridge Road, Wichita, KS 67226-1008. Visa/Mastercard accepted.

Based on reading this book and corresponding with Nuckolls, Steve decided that the problem probably lay with the voltage regulator and thus embarked on his second pot of Fool's Gold. Nothing wrong with the new regulator—it worked just fine, and may well be a better regulator—but the fluctuating voltage problem persisted! This is intentional. God meant electricity to be frustrating—just look it up in the Bible.

In the end, Steve solved the problem by simply popping the alternator-field circuit breaker and resetting it. The voltmeter is now dead-steady, and Steve thinks that all of the whee-whee-whee noises in the audio system are gone as well.

George Richards has just finished laminating the main spar caps and is now ready to taper them on the inside, but he found that the taper provided is not a straight line. George asked about this cut, whether we did a straight cut or a curved cut, and if curved then how?

What we do here is that we make a straight cut to taper the spar. We also follow the dimensions on the drawing, and this gives us a curved cut! How does a straight cut produce a curved cut? Easy. We bend the spar while we are making the cut.

Because the original dimensions do not exactly lend themselves to this, we adjust the thicknesses slightly to make a smooth curved cut. On the upper lamination, at Sta. 8, 28 becomes 28.2, at Sta. 10, 22 becomes 22.3 and at Sta. 11, 20 becomes 20.3. On the lower lamination, at Sta. 6, 25 becomes 25.3 and at Sta. 9, 19 becomes 19.3.

As you can see these changes are extremely minor and all result in a spar that is slightly stronger. We taper the spar laminations on our 'Gonzales' machine and hold it in place on a precision vacuum jig that bows the lamination slightly. Over the length of the spar, the bending is only about 20mm and can be done with finger pressure. When you have a \$35,000 custom-made Falco spar milling machine, it's very easy, and only takes a few minutes. I have no idea how scratch builders manage this sort of thing and I don't even like to think of the work involved.

Howard Benham reports that in making the heat muff for his Falco, he found that



Above center: Willard Hofler's Falco lacks only the cowling, prop and interior. Bottom: Butch Harbold's Sequoia 300 nears completion but is very seriously tail-heavy and will require a ten-inch movement of the engine to get it in balance.

two No. 5 door springs, stretched to 72" long, are a perfect fit. These are wrapped around the tubing and attached to the flange at each end. Springs are commonly used in heat mufflers to transfer more heat from the tubing to the air. Howard and Marty are nearing the completion of their Falco and hope to start taxi tests in February or March.

Fanie Hendriks asked about installing the windshield using a method Tony Bingelis describes in *Sportplane Construction Techniques*. "I have already fitted the canopy and now want to have a smooth bottom retaining strip for the windshield at the front and sides with no external screws. Tony makes it very clear as to how to construct the coaming as an integral part of the fuselage, but he stops short of telling you how you finally secure the windshield at the front and at both sides."

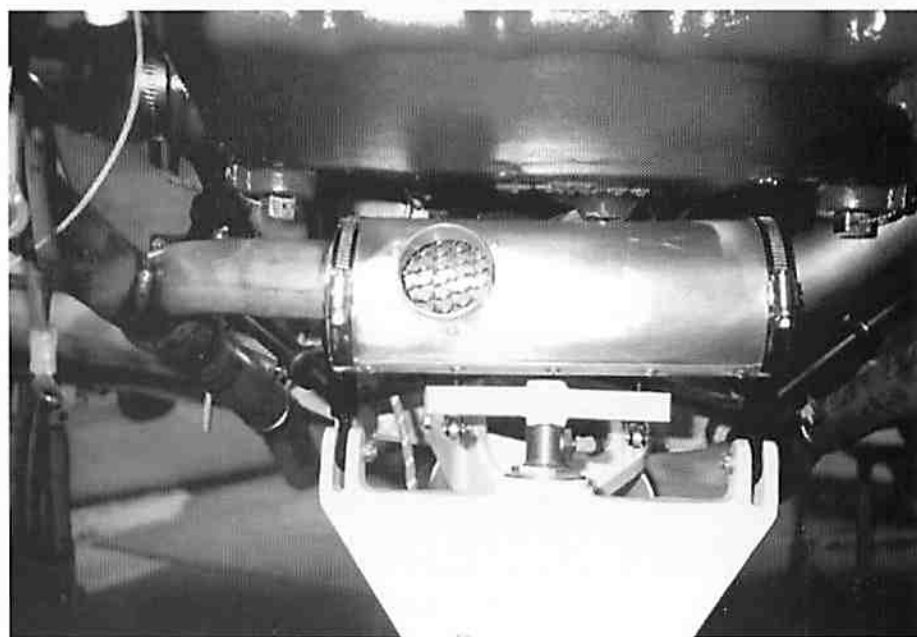
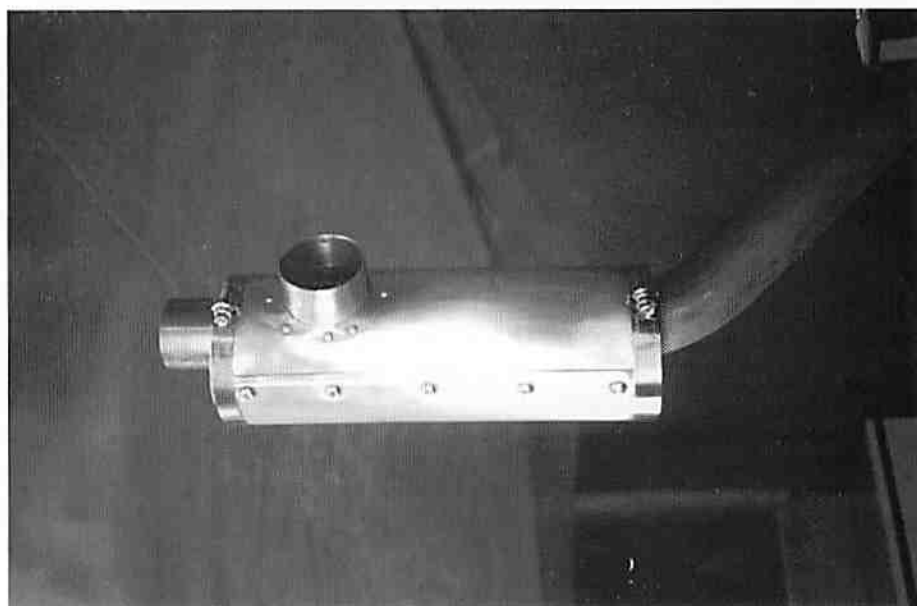
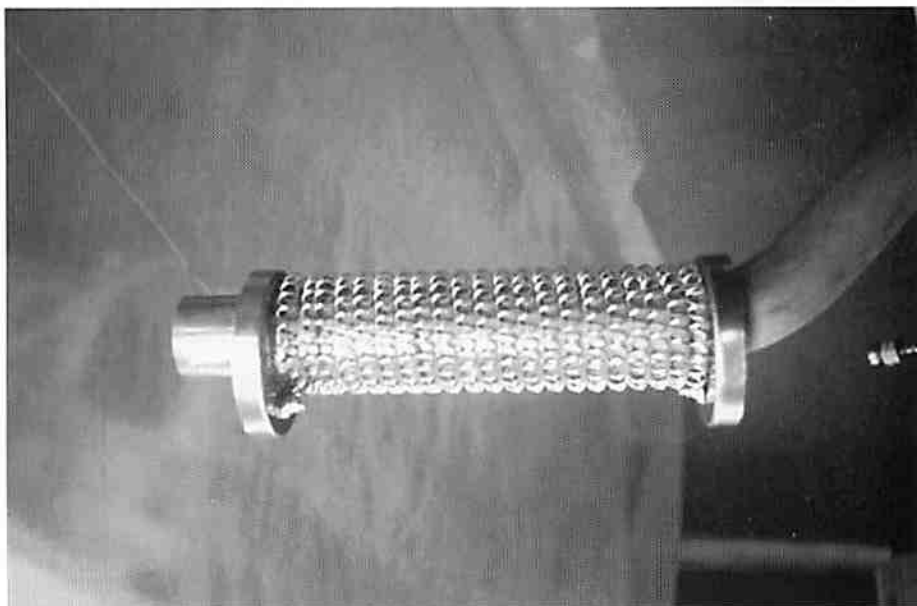
Tony Bingelis's method is based on the assumption that you will not be using screws at all on the front and therefore there is no sensible or easy way to get screws in there, and I don't see any way of using his method and getting screws in there. Screws are important as they give strength to the windshield which in turn gives strength to the windshield bow.

Remember that the canopy latch pulls on the windshield bow, and that one Irish Falco owner and his son were killed when a seagull hit the windshield, breaking it and releasing the canopy to slide back and knock the tail off the airplane. Please, use screws.

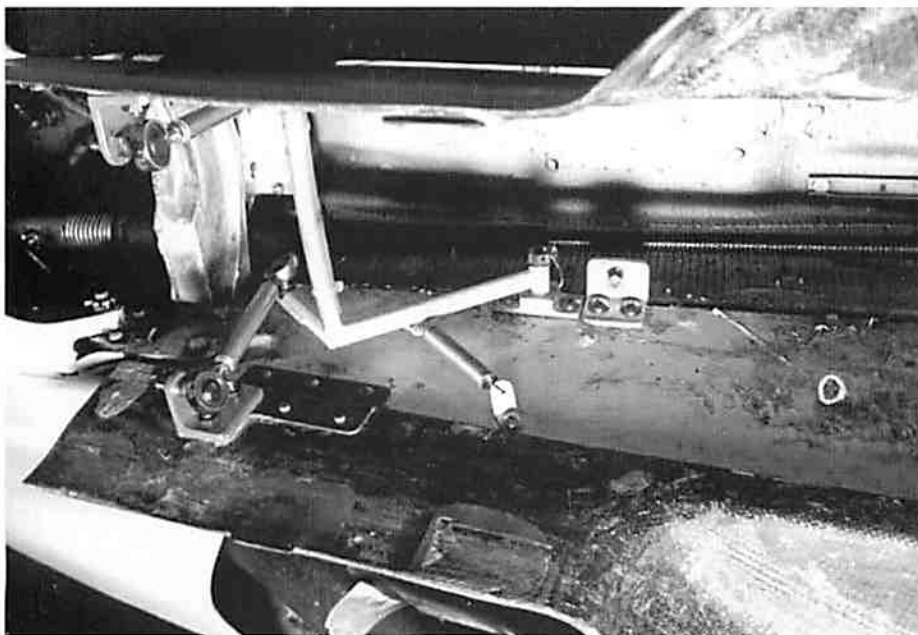
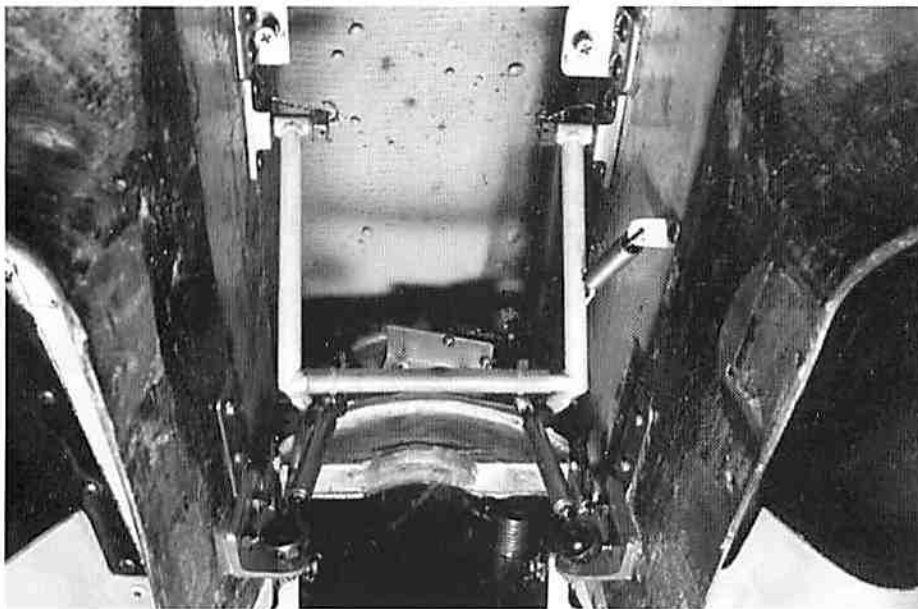
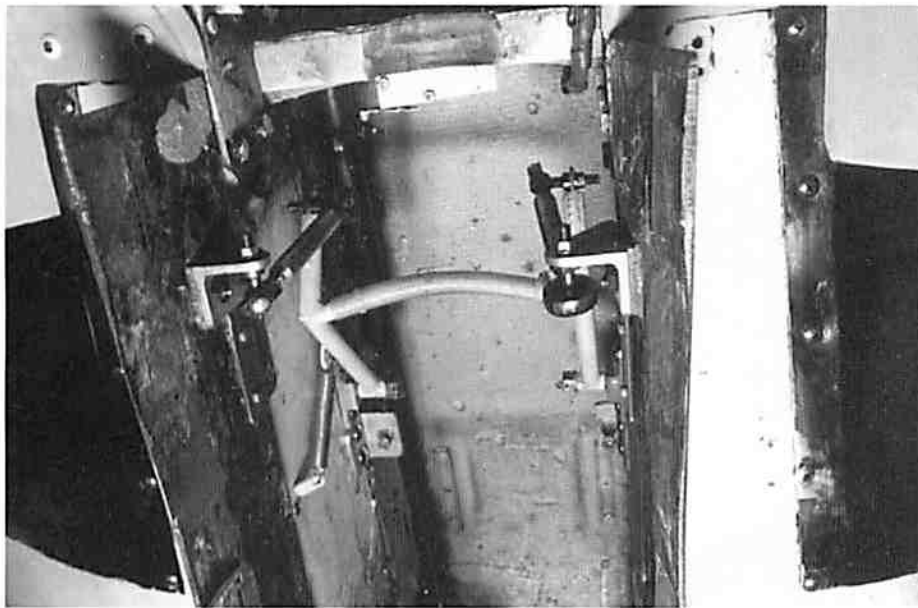
The most common way of doing this installation with a smooth cover and screws is to first install flathead screws with Tinnerman washers. These washers are dimpled for use with flathead screws, and they spread the load into the windshield. Then make the fairing strip in place with fiberglass. Tape off an edge on the acrylic and fiberglass right up to the tape. Sand it all smooth and paint up to a taped edge.

This is the method used by most of the exceptional Falcos of Hansen, Eriksen, MacMurray and other compulsive perfectionists. The only disadvantage is that if you ever have to replace the windshield, you will destroy the fairing strip and will have to rebuild it, but the reality is that you're probably going to make a mess replacing the windshield anyway.

On installing the canopy on the frame, Fanie reports, "I used a 1mm center drill, of the kind you use in a lathe. Its shank has exactly the thickness to fit snugly in the



Howard Benham's heat muff used 2" flanged outlet pipes from Aircraft Spruce.



Perry Burholm's nose gear bay door mechanism.

first hole that I drilled through the acrylic. And so you get a perfectly situated pilot hole."

Perry Burholm has been making preparations for the Falco birthday party at Oskhosh '95 by working on his Falco. He wants it to look as good as possible, so he has been working on a better way to close the nose gear bay doors. The photos to the left show this mechanism, which is fully adjustable and will not open from air pressure.

As mechanisms go, Perry's design looks to be reasonably simple and reliable. It's obviously heavier than the spring we have used, and involves greater cost if the parts were to be manufactured in quantity. On the other hand, it's several times simpler than mechanisms I've seen on a number of production airplanes from Wichita. I don't have any drawing on this, but if anyone is interested, perhaps we can get Perry to sketch it out.

Just aft of the pivot points for the mechanism are two brackets with screws. These are used to center, or align, the nose wheel so the doors can close tightly. As I understand it, the screws hit the nose gear fork and kick it straight. And, obviously, the screws themselves are adjustable.

Jack Lange asks if the MS21042 nuts can be cycled on and off without losing their safety grip. The answer is yes, and that is a basic part of the design. This is also true with elastic stop nuts, but there are always people who will swear that you can't, or shouldn't, do that. Since the safetying action of the nuts is caused by the nut pinching the bolt, the design would be defeated only by metallic wear, something you're not likely to do in the process of building a Falco.

It is possible, however, to wear the plating off the bolts, so most builders use plain nuts for temporary attachments and then install the MS nuts on final assembly—but if you have to remove and reinstall the MS nuts, then just do it.

There is some question about whether homebuilts require annual inspections, and the subject came up recently in a letter to *Kitplanes* from an experienced hired-gun builder who said that homebuilts do not require annuals. He said the regulations are quite clear. Editor Dave Martin agreed that the letter-writer was correct, and that the only thing required is something called an "on-condition inspection." But since all Falco builders are compulsives anyway, it's likely that most of you are doing the same thing anyway.—Alfred Scott

Goings On at Sequoia Aircraft

Busy. That's what's been going on around here. We just had our biggest December ever and poor Susan Rogers has been working hard to keep up with shipping orders, ordering new parts and keeping this place glued together.

We are now getting our act together in a big way on the tail group ribs. We previously made a large batch of ribs with some jigs that had toggle clamps to hold the gussets in place. The jigs made nice ribs, but it was a slow, highly inefficient process and the ribs were difficult to remove from the jig after the glue dried overnight.

The method that we're using now required a complete rework of the jigs, but it's much more efficient and we should never get caught with a back-order situation again on these parts. We're now making the ribs using the glue-and-staples techniques that we have used on the wing ribs. It's the same method used at the Pitts factory.

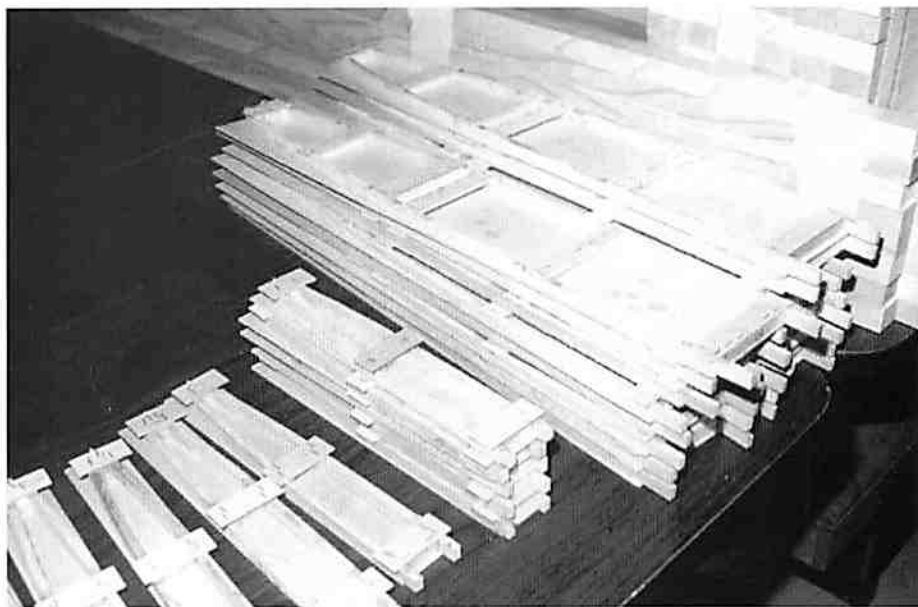
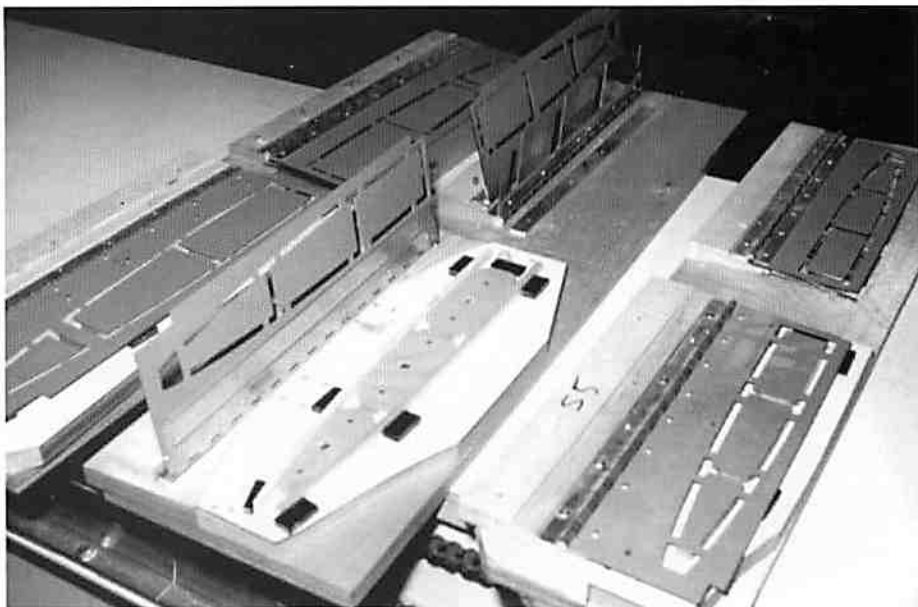
The principal difficulty is knowing where to staple, and this is solved by using two metal laser-cut staple guides. These are positioned over the jig and fold back on piano hinges. We first assemble the spruce pieces in the jig, then put a single rectangular plywood plate on top. This is precisely located against a metal bar on the underside of the staple guide.

The staple guide makes it possible to zip around the rib, staple through the plywood and yet hit the thin spruce pieces every time. We have a small pressure regulator on the staple gun to fine-tune the pressure of the gun—another lesson learned from the Pitts factory—so that the staples apply sufficient clamping pressure yet don't bury themselves into the plywood.

The ribs are then pulled off the jig, flipped over and the gussets are glued and stapled in place. In the second operation, another metal bar screwed to the base of the jig positions the rib for the staple guide.

The next thing that's going to happen around here is the final assembly of the remaining fuselage frames. I tend to work best when I work hard on one thing, and that's going to be my main activity in the coming months. There's a fair amount of work still required on the assembly jigs, but it always goes very quickly when the jigs are finished.

Meredith and I will be in London in the first week of April, and we will have a get-



Above: Perry and Lena Burholm on a California high.

together of Falco builders and owners on April 8. Stuart Gane has offered to take charge of things, so one of us will be in touch with you Brits shortly with the details.—*Alfred Scott*

Calendar of Events

Oshkosh '95. Plan now to attend the Fortieth Birthday Party for the Falco. All Falco owners are ordered to attend. Expect a massive turnout—Marcello Bellodi is going to bring his Falco from Brazil.

Susan's Corner

I hope everyone had a wonderful holiday season. I know I did. It was hectic and chaotic but it was great. I know some of you had an especially nice holiday because I was shipping kits to your loved ones behind your backs! I'll expect to hear about a lot of progress on those Falcos in the coming months.

I've enclosed a form for Oshkosh '95 for those of you who want to attend. I only have a few rooms left, and it's first come first served, so don't drag your feet. For those of you who have already contacted me, please fill out the form with your information and send it back to me.

A note to those of you that are building all your own parts—we've discovered we've been shipping an obsolete drawing. Sheet GG82 is obsolete, and you should have sheet GG82A. Since very few builders make this part, it is of little consequence to most of you, but we're not sure who needs the new drawing. If you need this drawing, please call or write me, and I'll send it to you post haste.

I'm continuing to get in, and order more of, the back-ordered parts, so hopefully I'll get you all caught up in the next couple of months. I appreciate everyone's patience with me as I've learned what I'm doing here.

Work on the stabilizer ribs has moved along quite quickly (several of you have received your back-ordered ribs recently). Soon we'll have plenty of them in stock.

The next big project will be the remaining fuselage frames. I'm convinced that 1995 will see all back-ordered frames caught up, with plenty of those in stock, too.

December 1994



Top: Crickett inspects the Benham's battery box. Center and Above: Stelio Wilkinson and Joel Shankle at the Great Oyster Fly-In.

The Oyster Fly-In back in November was certainly a memorable event. Lots of oysters, beer and good conversation. And I even had my maiden flight in the wonderful, beautiful Falco. It was great, and I loved it. Thank you, Jonas.

Until March when the next builder letter comes out (which will be spring for us here in Virginia—Yippee!) don't let the winter months slow you down.

—Susan Rogers

Sawdust

• What to wear when you take dollies up for a ride in your Falco. Keep an eye out for Steve Wilkinson and his Falco in a late January issue of the *Sunday Times* magazine, included with the New York Times newspaper. They're in the Fashion section, where Steve and four models display the latest in spring fashions in a full spread photo. Apparently this feature of the *Sunday Times* magazine is considered to be more important than the cover of *Vogue*, and models will kill to get in the photo. Steve said they arrived with a 'location van', a converted bus and about 20 people were involved in the process of getting the models made up and their hair done. The entire process took four hours in bitterly cold weather.

• Calendar girl. Get a copy of the EAA's 1995 'World of Flight' calendar featuring Bjoern Eriksen's Falco. It's the June airplane, and appropriately so because June 15, 1995 is the 40th anniversary of the first flight of the Falco.

• Next time you're tempted to blame everything on lawyers and insurance companies, consider the plight of the insurance company covering the owner of the airplane that taxied into Pawel Kwiecinski's Falco. The elevator and rudder were rebuilt by a shop in Alexandria, Minnesota, that specializes in wood aircraft repairs. They're right across from the Bellanca factory, and their work came to \$6,000, including the kit parts purchased from us. No complaint on that from the insurance company, which is used to paying a premium for one-time repair work. The problem, however, was about the painting. A guy did the job at night, and on a time-and-materials basis. He did a beautiful job, everyone agrees, but there's just this wee little problem about the cost. In all, it came to 296 hours of work, all itemized and accounted for, and at \$35.00 an hour, that comes to \$12,827. The insurance company is in agony. You get the idea that someone is getting hosed here?

• NASA is always spending money on futuristic things, few of which ever have any practical use, but then that's not necessarily the point of it, is it? The latest scheme, being cooked up jointly between NASA and Stanford University, is a supersonic flying wing. Imagine a flying saucer stretched to a long elliptical shape, with a tilting rudder at each end. It's sort of a surfboard, 400 feet long, that takes off like the average mad scientist's flying wing, but as it approaches supersonic speed, it turns to



Top: John Devoe's Falco is nearly ready to fly.

Above: Steve, Shirley, Judy, Jeff and Karl Hansen at Sunriver in September. Karl died on December 12 after a lengthy battle with cancer. This wonderful man, who said he'd never met a Falco builder he didn't like, touched us all with his warmth, generosity and enthusiasm. A career Air Force pilot with three tours in Vietnam, Karl decided it was time to get out when they had him bombing the same vacant gravel-pit every day. The Falco was a father-son project, proposed by Steve Hansen—"If you build it, I'll buy it"—and the Falco became a focal point of Karl's life. Sons Jeff and Steve both worked on the Falco, along with brother Don, while Karl's wife, Shirley, watched it all happen with amusement, support and appreciation. If you would like to write Shirley and others in the Hansen family, her address is 7615 Sierra Drive, Roseville, California 95678.

an oblique angle—a one-piece swing-wing where only the rudders move. The really crazy thing about this thing is that it's not so crazy after all, being a simple mechanical design utterly reliant on computer-assisted controls. Who knows if this thing will ever see production, but at least NASA is keeping the readers of *Popular Science* amused.

• Following the Urbanna Oyster Festival, authorities reported finding an intoxicated yellow labrador dog passed out on a curb on Saturday. "Someone had been feeding him

beer. You could smell it on his breath" reported Sheriff Lewis Jones. The young dog was taken to the firehouse where he recovered. "We fed him a little bit and walked him around, and he was all right," said Jones. The authorities returned the hungover dog to its owner, who said she hadn't seen him for two days. Also on the Urbanna front, following the publication of our press release in the local paper about inviting Col. Qadhafi, there was a minor uproar in town about inviting undesirables to the area, and some of the citizens raised the subject at the town council meeting.

Mailbox

It is time for me to order some kits for my Falco, but first a short report of my progress. The fin and rudder are completed with skin, antenna and hinges. The elevator is ready to skin, the stabilizer is skinned on one side and waiting to be closed after inspection. All wing ribs and tip bows are done. The fuselage frames, except the two diagonal, are done.

I like doing these jobs but I am really happy to finish the parts as they are a lot of small-piece work. I became a member of the Austrian Homebuilders Club named IGO-ETRICH-CLUB-AUSTRIA. These really nice guys are very helpful for my progress, because they are pushing me to proceed and build the first Falco in Austria.

As soon as I know the date of our annual fly-in (I think it will be in August 95), I will tell you. So maybe some of the European Falcos will visit that fly-in.

*Martin Steinwender
Vienna
Austria*

Bob Bredy is not going to eat my lunch, or anything else, I can tell you. I used to wonder what he did with all the gum he was chewing as he worked his way from zero to two hundred mph—now I know. He cooked up his own solvent and used the bubble-gum to seal his tanks, which as you know sometimes need to be checked for sunlight before installation.

I found out how much gum he chewed in all those years when I offered to fill up his front tank while he was busy putting away the Black & Decker, one day, shortly after his first flight. Well, imagine my surprise, although bone dry when I poked the nozzle to it, the tank was spilling over with only 8 gallons in it. All that bubblegum! Those hard points he put under the wings are going to be pretty useless when he takes his Falco to the Soldier of Fortune reunion in Nevada. He'll be over gross with a couple of six-packs under there, never mind the napalm.

Another thing that Bob didn't tell you, is that he is the only Swing-Wing mod builder who thought he could save money by making the parts himself, which he did. You know, the guy can do about anything with metal, but titanium from Taiwan just doesn't cut it—it's about twice as heavy as the good Russian stuff.

So I'm not worried. Besides, by the time he makes his gear doors, I'm going to be flying



*Top: Einstein was right, space and time are curved at the edges of the universe.
Above center: A-10 pilot at Oshkosh explaining how he got those suckers with his look-around infra-red rocket, saw their hot engines under the sand. Pow!
Above: Andrea Tremolada's Series IV Falco.*

circles around him—I'm just about ready to go with a modification to my Bendix injector for handling the new lead-free, nitro-based avgas. Will he be surprised! Also, I found a marvelously elegant way to make hydrazine in my garage. Unfortunately, the process takes a bit of space to describe. So I leave it until next time to give Falco fans the skinny on that deal.

Speaking of being surprised, I don't know who leaked the photo of my "Falco in re-entry orbit" to the media, but I wish whoever it was had gotten their facts straight. I can't blame you much for stuff I see Time or Newsweek doing all the time, but it was not frog eggs. It was my daughter's baby chickens. She is raising a couple of dozen. For the eggs, you know. So I read up and all, and figured there was a good chance that if those babies spent some time in zero-G, they would lay bigger eggs.

Well, it turns out fooling around with chicks is not rocket science. Instead of laying bigger eggs, they grew up to lay itty-bitty eggs. Lots of them. It seems their little sphincters took on a permanent high pucker because, unlike most birds, chickens hate to fly. Isn't that interesting?

*Jonas Dovydenas
Lenox, Massachusetts*

This year's annual Oyster Festival Fly-In was without a doubt the best ever, and every bit of credit goes to you for the inspired idea of inviting Colonel Qadhafi and his flying corps.

People can say what they will about a backward nation of goat herders whose crowning scientific achievement is a space heater that runs on camel dung. Qadhafi's aeronautical engineers have taken stealth technology to a level that staggers the imagination and baffles the senses. What an amazing afternoon!

There they were... an entire squadron of totally silent, absolutely invisible SF.260s, engaged in mock combat and amazing feats of aerobatic derring-do right over our heads. It was something we had to not see or hear to believe. When they buzzed the field in an inverted high-speed pass, the only clue to their presence was a slight increase in wind velocity, undoubtedly from their slipstream, and the faint aroma of aviation gas. Simply amazing!

It's too bad that the Colonel and his air-men were unable to hear Meredith and the other ladies ululating a traditional Libyan welcome at the edge of the runway. Perhaps they would've landed if they had. As



Top: Joel Shankle's Falco at the Oyster Fly-In.

Above: Everyone laughed when we invited Col. Qadhafi to the Great Oyster Fly-In and, of course, it was a bit of a publicity stunt cooked up by Steve Wilkinson. But the thing about mercurial people is that they do the unexpected, and sometimes the most demonized person turns out to have a warm side. He's far more subdued in a social setting than you might think, and as long as you stay off politics—which, believe me, we did!—he's not a bad sort at all and stopped by for a short visit after taking in the Urbanna Oyster Festival on his way to Washington after attending some function in Williamsburg. Above, Mu'ammarr and Sue Mullins watch as Joel and Carolyn Shankle fire up their Falco.

it was, we experienced a stunning half-hour display of showmanship, aerobatic skill and precision... totally silent, totally invisible. What a thrill to not see aviation history in the making!

Finally, with their traditional wing-wagging salute, Col. Qadhafi and the entire squadron of Libyan Stealth SF.260s formed up over the Rappahannock and presumably headed eastward toward their North

African homeland.

Thanks so much for allowing me to be present for this incredible event. It was the most amazing display I've never seen.

*Mark James
Richmond, Virginia*

Very funny, you cynical airhead, but the laugh's on you, who left too early to see what actually happened!—Scoti